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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/692,263

10/23/2003

Paul D. Bliley

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EXAMINER

MCCLOUD, RENATA D

ART UNIT

PAPER NUMBER

2837

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/692,263	BLILEY ET AL.	
	Examiner	Art Unit	
	Renata McCloud	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1,3-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification does not describe in an enabling manner how one single H-bridge changes configuration from a motor drive circuit into discrete switches. Applicant's disclosure describes the configurations separately, but does not disclose how the configurations change, as in how the H-bridge is changed from the first configuration into the second configuration.

Also, referring to claims 1 and 3, the specification does not describe how only two switches (a high switch and a low switch) drive a motor as an H-bridge.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1,3 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The limitation "as an H-bridge circuit" makes the claim indefinite. The preamble recites, "A configurable H-bridge circuit comprising", so the first and second configurations are claimed to both be H-bridges. The added limitation makes the claim read as if the second

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configuration is not an H-bridge. Also, it is well known in the art that an H-bridge comprises four switches. If the first configuration drives the motor as an H-bridge, then it would need four switches. It is unclear how two switches drive a motor as an H-bridge.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3-7, 17-22, 29, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hella (DE4440064) in view of applicants admitted prior art.

Claim 1: Hella teaches a high switch (Fig. 2:T1) connected to a power source (+); a low switch (T2) connected to ground (-); a first configuration of the high and low switch connected together (T1 connected to T2 at X) to drive the motor (Fig. 1:M) as an h-bridge; a second configuration in which the high and low switch are discrete where the high switch is coupled as a first component switch to a component (T1 coupled at pin1) and the low switch is coupled to a different component (T2 coupled at pin 2). It is unclear if Hella teaches the switches coupled together to independently drive a motor. Applicant's prior art teaches that it is well known in the art that an H-bridge is configured to independently drive a motor (pg 1:0003). It would have been obvious to one having ordinary skill in the art at the time the invention was made use the H-bridge of Hella independently, as admitted by applicant in order to drive a motor.

Hella also teaches:

Claim 3: a second high switch (T3), a second low switch (T4), wherein the first configuration includes the second high switch and the second low switch coupled (at Y) to drive the motor (Fig. 1:M).

Claims 4, 17, 21, 29: a first H-bridge including a first configuration as a first motor drive (Fig. 1: B1) and a second configuration as discrete switches to be coupled to different components (Fig. 1:B2); and a register to maintain an indicator of the first H-bridge as at least one of the first motor circuit or as the discrete switch (Abstract). Also, the referring to claim 29, the recitation "that when executed direct a printing device to" has not been given patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951)

Claims 5,18,22: the register maintains the indicator that the configurable first H-bridge is configured as the discrete switches (Abstract; Fig. 1)

Claims 6, 19: the register maintains a switch indicator that indicates a configuration of a discrete switch (abstract; Fig. 1).

Claims 7, 20, 30: a high switch (Fig. 2:T1) connected to a power source (+); a low switch (T2) connected to ground (-); a first configuration of the high and low switch connected together (T1 connected to T2 at X) to drive the motor (Fig. 1:M). Also, referring to claim 30, the recitation "that when executed direct a printing device to" has not been given patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951)

7. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Hella (EP0833437) in view of applicants admitted prior art.

Claim 1: Hella teaches a high switch (24) connected to a power source (18); a low switch (26) connected to ground (22); a first configuration of the high and low switch connected together to drive the motor (50); a second configuration in which the high and low switch are discrete where the high switch (24) is coupled as a first component switch to a component (52) and the low switch (26) is coupled to a different component (54). It is unclear if Hella teaches the switches coupled together to independently drive a motor. Applicant's prior art teaches that it is well known in the art that an H-bridge is configured to independently drive a motor (pg 1:0003). It would have been obvious to one having ordinary skill in the art at the time the invention was made use the H-bridge of Hella independently, as admitted by applicant in order to drive a motor.

Claim 3: Hella teaches a second high switch (24), a second low switch (26), wherein the first configuration includes the second high switch and the second low switch coupled (at 34) to drive the motor (M).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. Claims 8, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hella 064 and applicant's admitted prior art, in view of Hella (EP0833437)

Claim 8: Hella 064 and applicant teach the limitations of claim 4. Referring to claim 8 its unclear if they disclose a second motor being driven by an H-bridge. Hella 437 teaches a second H-bridge (24,26) to drive a second motor (50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Hella 064 and applicant to use a second H-bridge as taught by Hella in order to drive a motor.

Claim 9: Hella and applicant teach the limitations of claim 4. Referring to claim 8 its unclear if they disclose a second motor being driven by an H-bridge. Hella 437 teaches a second H-bridge circuit (24,26) configured as a second motor drive circuit; a third H-bridge circuit (24,26) implemented as a third motor drive circuit; and wherein the second H-bridge circuit is configured to drive the first motor (the second h-bridge is made up of the 4th-6th switches of 24/26), and the third H-bridge circuit is configured to drive a second motor in an event that the configurable first H-bridge circuit is configured as the discrete switches (the third h-bridge is mage of 5th-8th switches, the 5th and 6th of which drive the second motor). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Hella 064 and applicant to use a third H-bridge as taught by Hella in order to drive a motor.

10. Claims 10, 14,15,23-25, and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barrus et al (US 6082914) in view of Hella 437 and Applicant's admitted prior art.

Claims 10,23,31: Barrus et al teach a printing device, comprising: a first motor (Fig. 4: 230) configured for movable control of at least a first component in the printing device; a second motor (Fig. 4: 220) configured for movable control of at least a second component in the printing device; a multiple H-bridge circuit including: a first H-bridge circuit (274) configured to drive the first motor (230); a second H-bridge circuit (296) configured to drive the second motor (220); and a third H-bridge circuit (304) that includes a first configuration as a motor drive circuit to drive a third motor (186). They do not teach the driver includes a second configuration as discrete switches that can each be coupled as a component switch or the h-bridge independently driving a motor. Hella '437 teach a first motor (M), a second motor (M); a first H-bridge driving the first motor (24,26); a second h-bridge (24,26) driving the second motor; and a third h-bridge (24,26) having a first configuration driving a motor (M) and second configuration as discrete switches driving different components (52,54). Applicant's prior art teaches that it is well known in the art that an H-bridge is configured to independently drive a motor (pg 1:0003). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Barrus to use the H-bridge of Hella and Applicant in order to drive the motors.

Claim 14: Barrus et al, Hella '437, and Applicant teach the limitations of claim 10. Referring to claim 14, Hella teaches the third H-bridge circuit includes a high switch (24) connected to a voltage source (18) and includes a low switch (26) connected to ground, (22) and wherein the first configuration includes the high switch and the low switch connected together and coupled to drive the third motor (50).

Claim 15: Barrus et al, Hella '437, and Applicant teach the limitations of claim 10. Referring to claim 15, Hella teaches the third H-bridge circuit includes a high switch (24) connected to a voltage source (18) and includes a switch (26) connected to ground (22), and

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wherein the second configuration includes at least one of the high switch and the low switch coupled as the component switch (coupled to 52 and 54).

Claims 24,33: Barrus et al, Hella '437, and Applicant teach the limitations of claims 25,31. Referring to claims 24,33, Hella teaches coupling the third H-bridge to drive a third motor (M).

Claims 25, 34: Barrus et al, Hella '437, and Applicant teach the limitations of claims 23,31. Referring to claims 25,34, Hella teaches coupling the switch of the third H-bridge to a component in the second configuration (24, 26 coupled to 52,54)

Claim 32: Barrus et al, Hella '437, and Applicant teach the limitations of claim 31. Referring to claim 32, Hella teaches the second H-bridge circuit is configured to drive the first motor (the second h-bridge is made up of the 4th-6th switches of 24/26), and the third H-bridge circuit is configured to drive a second motor in an event that the configurable first H-bridge circuit is configured as the discrete switches (the third h-bridge is made of 5th-8th switches, the 5th and 6th of which drives the second motor).

11. Claims 11-13,16,26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barrus et al (US 6082914), Hella 437 and Applicant's admitted prior art as applied to the claims 10,23 above, further in view of Hella 064

Claims 11, 26: Barrus et al (US 6082914), Hella 437 and Applicant's admitted prior art teach the limitations of claims 10,23. Referring to claims 11,26, it is unclear if they teach a configuration register configured to maintain an indicator of the H-bridge circuit configuration. Hella '064 teaches a configuration register configured to maintain an indicator of the H-bridge circuit configuration (abstract).

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Claim 12 Barrus et al (US 6082914), Hella 437 and Applicant's admitted prior art teach the limitations of claim 10. Referring to claim 12, it is unclear if they teach a configuration register configured to maintain an indicator of the H-bridge circuit configured as discrete switches. Hella '064 teaches a configuration register configured to maintain an indicator of the H-bridge circuit configuration (abstract).

Claim 13: Barrus et al (US 6082914), Hella 437 and Applicant's admitted prior art teach the limitations of claim 10. Referring to claim 13, its is unclear if they teach a configuration register configured to maintain an indicator that an H-bridge circuit is configured as the discrete switches, the configuration register further configured to maintain a switch indicator that indicates a configuration of a discrete switch. Hella '064 teaches a configuration register configured to maintain an indicator that an H-bridge circuit is configured as the discrete switches, the configuration register further configured to maintain a switch indicator that indicates a configuration of a discrete switch (abstract).

Claim 16: Barrus et al (US 6082914), Hella 437 and Applicant's admitted prior art teach the limitations of claim 10 and referring to claim 16 Hella '437 teaches the H-bridge is in an ASIC. It is unclear if they teach a register. Hella '064 teaches and ASIC (fig. 1:1B) and a register (abstract).

Clam 27: Barrus et al (US 6082914), Hella 437 and Applicant's admitted prior art teach the limitations of claim 23 and referring to claim 27, Hella '437 teaches coupling the third H-bridge to drive a third motor (M). It is unclear if they teach a configuration register to indicate a configuration of the third H-bridge circuit. Hella '064 teaches a configuration register to indicate a configuration of a third H-bridge circuit.

Clam 28: Barrus et al (US 6082914), Hella 437 and Applicant's admitted prior art teach the limitations of claim 23 and referring to claim 28 Hella '437 teaches coupling the third H-

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bridge to drive a component (52,54). It is unclear if they teach a configuration register to indicate a configuration of the third H-bridge circuit. Hella '064 teaches a configuration register to indicate a configuration of a third H-bridge circuit.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Barrus et al (US 6082914), Hella 437 and Applicant's admitted prior art to use a configuration register as taught by Hella '064, in order to control which H-bridge drives a certain one of a plurality of motors.

Response to Arguments

12. Applicant's arguments with respect to claims 1,3-34 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 8 am - 5pm.

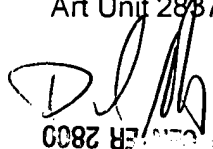
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2800 ext. 4. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RDM

Renata McCloud
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